

September 28, 2016

VIA EDGAR

Securities and Exchange Commission  
Division of Corporation Finance  
100 F Street, NE  
Washington, D.C. 20549  
Attention: Suzanne Hayes, Assistant Director

**Re: Xtant Medical Holdings, Inc.  
Registration Statement on Form S-1  
Filed August 26, 2016  
File No. 333-213350**

Dear Ms. Hayes:

On behalf of Xtant Medical Holdings, Inc. (the “**Company**”), we respond as follows to the comment letter from the staff (the “**Staff**”) of the Securities and Exchange Commission (the “**Commission**”), dated September 21, 2016, regarding the Company’s Registration Statement on Form S-1 (File No. 333-213350) (the “**Registration Statement**”).

Captions and page references herein correspond to those set forth in Amendment No. 1 to the Registration Statement (“**Amendment No. 1**”), as filed with the Commission on the date hereof. Capitalized terms used but not defined herein have the meanings ascribed to them in the Registration Statement.

Please note that for the Staff’s convenience, we have recited each of the Staff’s comments and provided the Company’s response to each comment immediately thereafter.

**Prospectus Cover Page**

- Please confirm that any preliminary prospectus you circulate will include all non-Rule 430A information, including the volume of securities offered. For guidance concerning disclosure of the principal amount of securities to be offered, please refer to Question 227.02 of the Division of Corporation Finance’s Securities Act Rules Compliance and Disclosure Interpretations, available on the Commission’s website.***

**Response:** The Company hereby confirms that the preliminary prospectus we circulate will include all non-Rule 430A information, including the price range and related information based on a bona fide estimate of the public offering price within that range, and other information that was left blank in the Registration Statement.

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**Use of Proceeds, page 34**

2. ***Please revise your disclosure to set forth the approximate amount of proceeds intended for each specified purpose. Refer to Item 504 of Regulation S-K.***

Response: In response to the Staff's comment, the Company advises the Staff that it has revised the disclosure on page 34 of Amendment No. 1 to disclose that we expect gross proceeds of \$15.0 million and net proceeds of \$13.75 million. We have also specifically listed that we plan to use those proceeds as follows: \$7.0 million to support the continuing execution of the Company's growth strategy and \$6.75 million for general corporate purposes.

**The Rights Offering**  
**Expiration Date; Extension, page 40**

3. ***We refer to your disclosure concerning your option to extend the rights offering in your sole discretion. Please revise here and on the prospectus cover page to indicate whether there is a durational limit applicable to extensions of the offering.***

Response: In response to the Staff's comment, the Company advises the Staff that it has revised the prospectus cover page and other related pages of Amendment No. 1 to disclose that there is a thirty (30) day durational limit applicable to extensions of the offering.

\* \* \* \* \*

The Company hereby acknowledges that:

- should the Commission or the Staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the Staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the Company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the Company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

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If you have any questions, please do not hesitate to contact me at (406) 388-0480, or our counsel, Travis J. Leach of Ballard Spahr LLP, at (602) 798-5444.

Very truly yours,

XTANT MEDICAL HOLDINGS, INC.

/s/ John Gandolfo

John Gandolfo

Chief Financial Officer

cc: Travis J. Leach, Ballard Spahr LLP

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